AMENDMENTS TO THE CLAIMS

Claims 1-10 are cancelled.

11. (currently amended) A seismic acquisition system, comprising:
one or more sensors adapted to sense conditions and generate signals representative of the sensed conditions including a memory for storing the signals, each sensor being adapted to control a channel assignment and a time slot for transmitting the signals;
a base station operably coupled to the sensors for receiving and transmitting the signals, the base station including a memory for storing the signals; and
a recorder operably coupled to the base station for storing the signals.

12. (currently amended) A method of communicating in a seismic acquisition system having sensors, base stations and a recorder, comprising:
storing data in the sensors;
using the sensors to control a channel assignment and a time slot for transmitting the data;
transmitting data from the sensors to the base stations;
storing data in the base stations; and
transmitting data from the base stations to the recorder.

Claim 13 is cancelled.

14. (currently amended) A seismic acquisition system, comprising:
a plurality of rows of sensor stations for sensing conditions and transmitting signals representative of the sensed conditions, each sensor station being adapted to control a channel assignment and a time slot for transmitting the signals;
a plurality of base stations coupled to the rows of sensor stations for receiving and transmitting the signals; and
a recorder operably coupled to the base stations for receiving the signals.

Claims 15-26 are cancelled.

27. (previously presented) The system of claim 11 further comprising a communication link having at least one channel for providing communication between the one or more sensors and the base station.

28. (previously presented) The system of claim 27, wherein the one or more sensors comprise N sensors, the base station further comprises M base stations, the at least one communication channel further comprising M frequency bands divided up into N+1 time slots.

29. (previously presented) The system of claim 28, wherein the N+1 time slots include:

N time slots for transmitting information from each of the sensors to a base station and one time slot for transmitting information from the base station to the sensors.

30. (currently amended) The system of claim 27, wherein the at least one channel is divided up into time slots, wherein ~~the~~ each time slot includes ~~slots include~~ a signaling bit, ~~and~~ a status bit ~~bits~~, seismic information and guard time.

31. (previously presented) The system of claim 27 further comprising at least one processor associated with the base station and the one or more sensors operating according to a set of programmed instructions for determining one or more communication parameters between the one or more sensors and the base station.

32. (previously presented) The system of claim 31, wherein the set of programmed instructions includes instructions for determining at least one of a channel assignment, a time slot and a frequency for sending information between the one or more sensors and the base station.

33. (previously presented) The system of claim 11, wherein the base station includes:

a transceiver;

one or more diversity antennas; and

one or more directional antennas.

34. (previously presented) The system of claim 11, wherein the recorder includes:

one or more diversity antennas; and

a microwave antenna.

35. (previously presented) The system of claim **11**, further including:

a dedicated communication link for coupling the sensors to the recorder.

36. (previously presented) The system of claim **14**, further including one or more cellular wireless communication links for coupling the sensor stations and the recorder.

37. (previously presented) The system of claim **36**, wherein the cellular wireless communication links include one or more of:

frequency division multiple access;

time division multiple access; and

code division multiple access.

38. (previously presented) The system of claim **14**, further including one or more cellular wireless communication links for coupling the base stations and the sensor stations.

39. (previously presented) The system of claim **38**, wherein the cellular wireless communication links include one or more of:

frequency division multiple access;

time division multiple access; and

code division multiple access.

40. (previously presented) The system of claim **14**, further including one or more wireline communication links for coupling the sensor stations and the base stations.

41. (previously presented) The system of claim **40**, wherein the wireline communication link comprises a twisted pair communication link.

42. (previously presented) The system of claim **41**, wherein the twisted pair communication link includes one or more of:

an asymmetric digital subscriber loop;
a high speed digital subscriber loop;
a very-high speed digital subscriber loop;
a T1 connection; and
an E1 connection.

43. (previously presented) The system of claim **40**, wherein the wireline communication link includes a coaxial communication link.

44. (previously presented) The system of claim **43**, wherein the coaxial communication link includes one or more of:
an Ethernet connection;
a T4 connection; and
an E4 connection.

45. (previously presented) The system of claim **40**, wherein the wireline communication link comprises a fiber optic communication link.

46. (previously presented) The system of claim **45**, wherein the fiber optic communication link includes one or more of i) an FDDI fiber optic backbone; and ii) an OC-3 connection.

47. (previously presented) The system of claim **14**, further including one or more wireline communication links for coupling the base stations and the recorder.

48. (previously presented) The system of claim **14**, wherein at least one sensor station is a wireless master sensor station, comprising:
a transceiver for transmitting and receiving information including a directional antenna;
a control module coupled to the transceiver for monitoring and controlling the operation of the wireless master sensor station; and
a sensor module coupled to the control module for sensing conditions and generating signals representative of the sensed conditions.

49. (previously presented) The system of claim **14**, wherein the plurality of base stations comprise picocell base stations, each picocell base station including:

a first cellular transceiver including a first antenna;

a second cellular transceiver including a second antenna;

a third cellular transceiver including a third antenna;

a radio transceiver including a radio antenna;

a control module coupled to the first, second and third cellular transceivers and the radio transceiver;

a first wireline interface coupled to the control module;

a second wireline interface coupled to the control module; and

a third wireline interface coupled to the control module.

50. (previously presented) The method of claim **12**, wherein said transmitting information from the sensors to the base stations, includes:

listening for an open time slot, frequency , and sector;

requesting use of the available time slot from the base station;

if the base station is operating at full capacity, then reducing the overall data for the base station; and

if the base station is not operating at full capacity, then capturing the open time slot and transmitting to the base station.

51. (previously presented) The method of claim **12**, wherein transmitting data from the sensors to the base stations includes determining if the data includes errors, and if the data includes errors, then retransmitting the data.

52. (previously presented) The method of claim **51**, wherein retransmitting the data includes retransmitting the data during a non-active time.

53. (previously presented) The method of claim **12**, wherein the sensors are positioned at different distance from a base station, the method further comprising:

transmitting information from one of the sensors to the base station; and

if the sensor is a nearby sensor, then adjusting the modulation in the communication channel to increase the data density.

54. (previously presented) The method of claim 12, wherein the seismic acquisition system includes a plurality of communication channels and wherein transmitting data from the sensors to the base stations further comprises:

selecting a channel for transmission from the sensor to the base station;

if no channels are available, then waiting until channel is available;

if the selected channel is available, then transmitting the information from the sensor to the base station;

if the selected channel is impaired, then selecting another channel;

if all of the information has not been properly transmitted, then adjusting to a lower order modulation and transmitting a request for retransmission from the base station to the sensor; and

if all of the information has been properly transmitted, then adjusting to a lower order modulation and transmitting control information from the base station to the sensor.

55. (previously presented) The method of claim 54, further including using the sensor to monitor the communication channels.

56. (previously presented) The method of claim 54, further including using the sensor to maintain record of the available channels.